



December 20, 2002

Mr. James Bartridge
Project Manager
California Energy Commission
Energy Facility Licensing
1516 Ninth Street MS 3000
Sacramento, CA 95816

Attention: Dockets Unit

Re: Inland Empire Energy Center Project—Docket No. 01-AFC-017
Visual Analysis and Revised Landscaping Plan—Response to PSA Workshop

Dear Mr. Bartridge:

This letter follows up our discussions during the Preliminary Staff Assessment (PSA) workshop regarding the visual analysis and landscape plan for the Inland Empire Energy Center (IEEC) project. Our objective has been to develop a revised plan for project landscaping that addresses the issues reviewed in the workshop with California Energy Commission (CEC) Staff. Specifically, based on Staff's comments, we are striving to provide as much screening as practicable as quickly as possible from the Key Observation Points (KOPs) where Staff identified in the PSA that significant impacts could exist without adequate mitigation. Although we continue to object to the overall 5-year timeframe included in Condition of Certification (COC) VIS-3, we believe the analysis and revised landscaping plan addresses the Staff's concerns.

The following suggestions -- discussed with Staff at the workshop -- have been incorporated into the analysis and revised plan described in the attached report.

1. Adding berms to key areas to shorten the time to achieve screening objectives,
2. Planting alternative tree species that can achieve faster growth rates,
3. Planting 24-inch box trees for the species that provide critical screening rather than the 15-gallon planting size previously proposed,
4. Planting the trees in critical screening areas at site mobilization rather than commercial operation to achieve a 2-year head start in growth,
5. Augmenting the landscaping around the asphalt plant on the northern boundary of the site,
6. Planting screening trees or shrubs along Highway 74, and
7. Planting trees along the McLaughlin Road right-of-way to improve screening from KOP 1 and KOP 2.

We look forward to your review of the attached report; please don't hesitate to call me if you have any questions. We appreciate Staff's assistance in providing the concrete feedback that helped us prepare a revised plan.

Sincerely,

A handwritten signature in cursive script, appearing to read "M. Hatfield", followed by a horizontal line underneath the name.

Michael Hatfield
Development Manager
Inland Empire Energy Center

***Visual Analysis
and
Revised Landscaping Plan***

Response to PSA Workshop

Inland Empire Energy Center

(01-AFC-17)

December 2002

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BACKGROUND AND OBJECTIVES

The analysis of Visual Resources that was submitted as a part of the Application for Certification (AFC) for the Inland Empire Energy Center (IEEC) included a figure (Figure 5.10-3) indicating the layout of the project equipment on the site and a conceptual plan for onsite landscaping intended to provide screening for the IEEC and to visually integrate it into its overall setting. The conceptual landscape plan was later revised to move the landscaping at the northern portion of the site closer to the viewer. This revised conceptual landscape plan was included in Data Response Submittal #3 as Figure 149-1. In the Preliminary Staff Assessment (PSA), California Energy Commission Staff (Staff) concluded that the landscaping provided for in the conceptual landscape plan would not provide sufficient landscaping soon enough to avoid the creation of a significant project impact on views from Key Observation Points (KOPs) 1, 2, 4, and 5. Although the IEEC project team (Applicant) also views the screening of project elements from these KOPs to be important, the Applicant does not concur with the 5-year criteria used by Staff.

A PSA workshop held in Romoland, California on August 14, 2002 provided the opportunity to meet with CEC Staff to explore concerns regarding potential visual impacts in more detail and to learn what degree of project landscaping would, in Staff's opinion, screen the project sufficiently to avoid creation of significant levels of visual impact. Based on the guidance provided at that workshop, The Applicant has revised the conceptual landscape plan to incorporate the suggestions from the workshop and to maximize the degree of screening that the CEC Staff defined as critical to the impact analysis. With this filing, the Applicant submits a revised conceptual landscape plan for the IEEC site along with the analyses conducted to:

- Evaluate all of the specific landscaping ideas that the Staff suggested to us at the workshop, and
- Develop a revised plan for project landscaping that maximizes the level of screening from critical views, while respecting other important project requirements, including maintenance of adequate access to the project site during construction.

APPROACH

The Applicant has researched and evaluated the various improvements that Staff suggested to enhance project screening in the PSA and during the visual resources part of the August 14, 2002 PSA workshop. These improvements included:

- Adding berms to key areas to shorten the time to achieve screening objectives,
- Planting alternative tree species that can achieve faster growth rates,
- Planting 24-inch box trees to start with larger trees,
- Planting the trees at site mobilization rather than commercial operation to get a 2-year head start on growth,

- Moving the landscaping closer to the viewer to achieve more screening sooner by:
 - Augmenting the landscaping around the asphalt plant on the northern boundary of the site,
 - Planting screening trees or shrubs along Highway 74, and
 - Adding landscaping to the McLaughlin Road right-of-way.

Each of the suggestions listed above has been incorporated into the revised landscaping plan described in this report with the exception of adding landscaping to the McLaughlin Road right-of-way, which was deemed to be infeasible. The Applicant does not own or otherwise have control of the various properties along McLaughlin Road, which means that any landscaping along McLaughlin Road would need to be located within the right-of-way for the road. Currently, the County of Riverside (County) right-of-way for McLaughlin Road is sixty feet wide, as is standard for their “general local street” designation. Although McLaughlin Road is currently only a dirt road, the County’s long-term plan, as indicated in the Menifee North Specific Plan, [designates McLaughlin Road as a “secondary highway”, which requires an eighty-eight feet wide right-of-way (Menifee North Specific Plan, pp. II-13 and III-15). Thus, any plantings placed in the County’s current McLaughlin Road right-of-way would need to be removed in the near future when the County acquires the additional right-of-way and McLaughlin Road is improved.

To assist the IEEC project team with this analysis, Ian Davidson, a local landscape architect (California Landscape Architect License #2651), was retained to provide local expertise, particularly regarding alternative plant species and growth rates. His firm, IDLA, is also preparing the landscaping plans for the Riverside County Economic Development Agency’s (EDA’S) beautification project along Highway 74. Mr. Davidson completed a site visit and reviewed the conceptual landscape plan previously provided to Staff in Data Response Submittal #3, Figure 149-1. He made a number of recommendations that are incorporated in this report.

In considering Staff’s proposed improvements, the Applicant started with each of the KOPs that Staff identified in Appendix VR-1 of the PSA as having significant impacts without additional mitigation. Therefore, this analysis addresses KOPs 1, 2, 4, and 5. Staff concludes in the PSA that the moderate visual change that would be perceived from KOP 3 and KOP 6 would cause an adverse but not significant visual impact, thus no further evaluation was performed relative to the views of the project from these KOPs.

A quantitative analysis was then performed to determine how best to maximize the screening of the larger project structures from the various KOPs. First, the larger project structures visible from each KOP were identified and the desired level of screening for each structure was established based on the equipment dimensions found in Table 5.10-2 of the AFC. Figure 1, Schematic for Screening Calculations, depicts the method for estimating the height of screening required to screen each of the larger project structures in the view from a particular KOP. The Legend in Figure 1 explains each of the parameters used in the detailed calculations.

Sight lines were drawn from each KOP to the larger project elements visible from the KOP. Figure 2, Conceptual Landscape Plan and Project Context, shows the location of each KOP (with the exception of KOP 6, which pertains to the gas compressor station), and the sight lines for the

calculations. Using the parameters defined in Figure 1 and the initial planting height and annual growth rate of the proposed landscaping, calculations were made to determine the number of years necessary to achieve the desired level of screening.

Table 1, Screening Calculations, summarizes the detailed calculations for each KOP, sight line, and project structure. The various distances, dates of planting, heights, tree sizes, and growth rates were used to calculate the years after the Commercial Operation Date (COD) to achieve the desired level of screening for each IEEC structure. A detailed discussion of the results of the calculations in Table 1 for each KOP is included in the results section of this report.

REVISED LANDSCAPING PLAN

Figure 2, IEEC Landscaping Plan, prepared on an orthophoto base, presents a revised landscaping plan incorporating the Staff's suggestions discussed at the PSA workshop as well as the recommendations of the local landscape architect, Mr. Davidson. As previously noted, the objective was to use a variety of fast-growing species to screen the bulk of the IEEC structures.

The tree species proposed for this revised landscape plan are listed in Table 2, Plant Palette. Mr. Davidson recommended the species listed in the table because of their extremely fast growth rates, good screening characteristics, and suitability for the local climate. As this table indicates, many of the tree species used will be planted at 24-inch box size. This is a change from the 15-gallon size trees specified in the original landscape plan, and will create a somewhat higher level of screening in the first years after landscape installation.

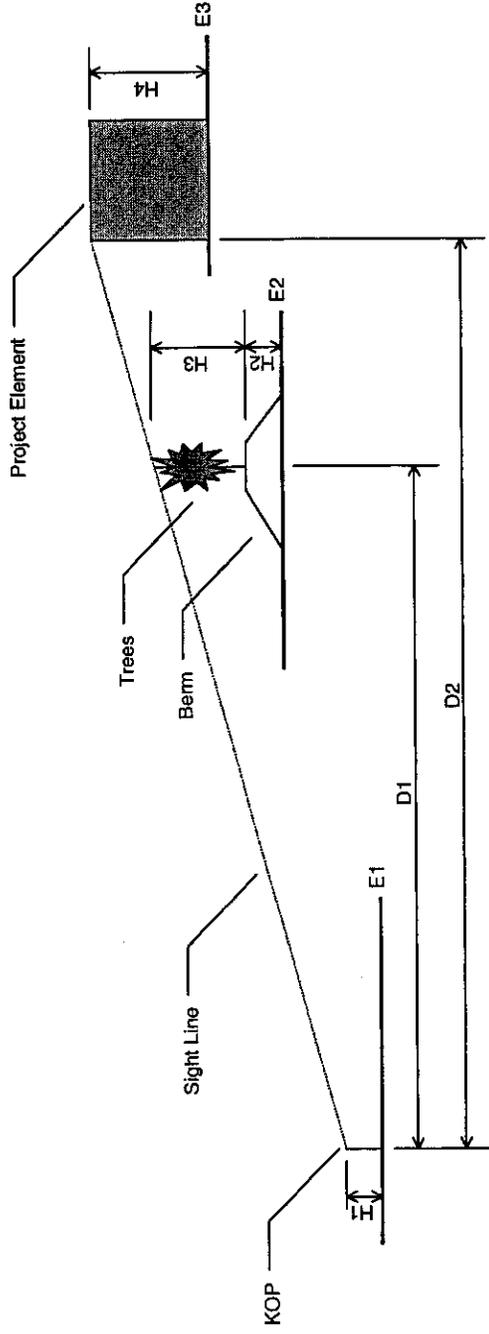
In particular, the *Eucalyptus camaldulensis* was replaced with the broad leaf, evergreen tree, Silk Oak or *Grevillea robusta*. Mr. Davidson proposed the replacement of the *Eucalyptus camaldulensis* because a pest, the lerp, has in recent years attacked it. Please see the report by the University of California Davis, [www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7460.html]. The Silk Oak (shown as tree Type A in Figure 2 and Table 2) fills the requirement of fast growth with excellent year-round screening characteristics. According to a report by the U. S. Forest Service, the tree can achieve growth rates of six feet a year and can outgrow the *Eucalyptus globules*, a tree very similar in growth habit to the previously specified *camaldulensis*. (U. S. Forest Service, Fact Sheet ST-285, November 1993.) The Forest Service further reports that the Silk Oak thrives in heat, is quite tolerant of drought, and grows extremely well in Southern California where it easily reaches 100 feet tall. Thus, the Silk Oak has been selected as the fast-growing tree that will provide the primary screening for the IEEC project elements.

The *Brachychiton acerifolius* from the previous plan has been replaced with Shamel Ash, or *Fraxinus uhdei* (tree Type B in the tables and figures). It is also a fast growing evergreen, achieving heights of 25 to 30 feet in 10 years and offers good screening as a result of its wide spread. Also, the *Pinus halapensis* previously shown near the entrance to the IEEC is being replaced with the Mondel Pine, or *Pinus elderica* (tree Type D in the tables and figures). It is extremely fast growing and does not take on the wind blown appearance that *Pinus halapensis* tends to get in the IEEC project area. The street trees adjacent to Antelope Road will remain as the Idaho Locust, or *Robinia x ambigua* 'Idahoensis', and the trees adjacent to the IEEC parking area will remain as the Crape Myrtle, or *Lagerstroemia indica*.

Additionally, a new species was added to the plant palette based on Mr. Davidson's recommendation. Highway 74 is currently in the preliminary planning stages of a beautification project. This presents an opportunity for Calpine to augment the project and provide additional off-site screening for the IEEC. This is described in more detail in the results section for the applicable KOPs. For the planting area south of Highway 74 shown in Figure 2, the *Heteromeles arbutifolia*, commonly known as the Toyon or Christmas Berry is proposed. This species is an evergreen suitable for use as a large screening shrub, is proposed for this application for the following reasons. First, there are overhead power lines in this area, making the use of tall trees problematic. Secondly, because the proposed landscaping is so close to KOP 5 and travelers on Highway 74, it is more important to maximize the screening at eye level and less important to achieve rapid height.

The Applicant is also proposing to add an approximately 6-foot high berm along the west side of the IEEC site, decreasing the time to screen the larger project structures from the key KOPs. The area to be bermed is shown in Figure 2, and Appendix B contains a schematic of the proposed berm. In addition, the Applicant is proposing to plant screening trees in the most-critical areas at mobilization rather than commercial operation in order to further reduce the time required to achieve the desired level of screening of the larger project elements.

Finally, the revised plan coordinates with Riverside County EDA's Highway 74 beautification project, as it has been defined preliminarily. The Applicant will continue to monitor the project for opportunities to refine the landscape plan as appropriate.



Legend

- E1 – Surface Elevation at KOP
- E2 – Surface Elevation at Base of Landscape Berm
- E3 – Surface Elevation at Base of Project Element
- H1 – Viewing Height at KOP
- H2 – Height of Landscape Berm
- H3 – Height of Trees
- H4 – Screening Height for Project Element
- D1 – Distance from KOP to Trees
- D2 – Distance from KOP to Project Element

Figure 1
 Schematic for Screening Calculations

Table 1
Screening Calculations

KOP No.	Legend [See Figure 1]	H4 Desired Screening Height for Plant Element (ft)	H2 Berm Height (ft)	E1 Grade Elevation at KOP (ft)	E2 Base of Berm Elevation at Trees (ft)	E3 Grade Elevation at Plant Element (ft)	D1 Distance from KOP to Trees (ft)	D2 Distance from KOP to Plant Element (ft)	H3 Required Tree Height to Provide Specified Screening (ft)	Tree Planting Height (ft)	Tree Growth Rate (ft/yr)	Tree Planting Date (yrs after MOB)	Years to Provide Specified Screening (yrs after COD)
1	Large IEEC Structures Visible from KOP	45	6.0	1438	1440	1445	2,083	2,306	39.5	7.0	6.0	0.0	3.4
1	Cooling Tower (west end) [Note 1]	45	0.0	1438	1441	1445	2,472	2,917	41.8	7.0	6.0	2.0	5.8
1	Cooling Tower (east end)	80	6.0	1438	1440	1445	2,194	2,750	62.4	7.0	6.0	0.0	7.2
1	HRSG [Note 2]	43	6.0	1438	1440	1445	2,250	2,361	39.9	7.0	6.0	0.0	3.5
2	Recycled Water Tank	45	6.0	1436	1440	1445	1,500	1,639	39.8	7.0	6.0	0.0	3.5
2	Cooling Tower (west end)	45	6.0	1436	1440	1445	1,417	2,444	23.4	7.0	6.0	0.0	0.7
2	Cooling Tower (east end)	80	6.0	1436	1441	1445	1,639	2,028	61.9	7.0	6.0	0.0	7.1
2	HRSG	43	6.0	1436	1441	1445	1,583	1,639	39.4	7.0	6.0	0.0	3.4
2	Recycled Water Tank	80	0.0	1450	1445	1445	861	1,472	50.9	7.0	6.0	0.0	5.3
4	HRSG - trees at site	48	0.0	1460	1448	1445	1,694	1,806	43.3	7.0	6.0	2.0	6.0
5	Switchyard - trees at site [Note 3]	48	0.0	1460	1459	1445	139	1,806	8.2	5.0	2.0	2.0	1.6
5	Switchyard - shrubs south of Hwy 74	80	0.0	1460	1448	1445	1,500	2,333	55.6	7.0	6.0	1.5	7.6
5	HRSG - trees at site	80	0.0	1460	1459	1445	194	2,333	11.0	5.0	2.0	2.0	3.0
5	HRSG - shrubs south of Hwy 74	65	0.0	1460	1448	1445	1,472	2,222	46.8	7.0	6.0	2.0	6.6
5	Combustion Turbines - trees at site [Note 4]	65	0.0	1460	1448	1445	167	2,222	9.4	5.0	2.0	2.0	2.2
5	Combustion Turbines - shrubs south of Hwy 74												

Construction Duration (MOB to COD) 2 yrs
Viewing Height (eye level) - H1 5 ft

Notes:

1. Height shown is to the top of the fan deck.
2. Height shown is to the top of the operating deck.
3. Height shown is to the top of the bus structures.
4. Height shown is to the top of the air inlet filter.

Table 2
 Landscape Plan Plant Palette

Tree Species	Tree Type	Initial Planting Size	Initial Planting Height (Feet)	Growth Rate (Feet per Year)	Comments
Silk Oak <i>Grevillea robusta</i>	A	24-inch box	6 to 7	6	Will be used around the project perimeter to provide tall, fast-growing evergreen screening
Shamel Ash <i>Fraxinus uhdei</i>	B	24-inch box	6 to 7	4 to 5	Will be mixed in with the Silk Oak trees in the plantings around the project perimeter to provide fast growing evergreen screening that adds a dimension of visual variety to the composition of the vegetative screen
Idaho Locust <i>Robinia x ambigua 'Idahoensis'</i>	C	24-inch box	6 to 7	1 to 2	This is the street tree that will be planted along the edge of Antelope Road in conformance with the Menifee North Specific Plan
Mondel Pine <i>Pinus elderrica</i>	D	24-inch box	5 to 6	4 to 5	Several of these pines will be planted just inside the entrance to the IEEC to serve as an accent tree.
Crape Myrtle <i>Lagerstroemia indica</i>	E	15-gallon	4 to 5	1 to 2	Will be used for landscaping of the IEEC parking area.
Toyon <i>Heteromeles arbutifolia</i>	F	15-gallon	4 to 5	2	Proposed for right-of-way on south side of Highway 74

Appendix A includes pictures of each of the tree species listed above.

RESULTS

The following sections review the results based on the landscape plan described Figure 2 and the analysis in Table 1 for each KOP.

KOP 1

The most visible project structures from this KOP are the cooling tower, heat recovery steam generator (HRSG), and recycled water tank. The landscaping plan includes planting the Type A trees on the west edge of the site south of the access road at site mobilization. These trees will be planted on a 6-foot berm to further minimize the time to achieve the desired level of screening. The Type C street trees along Antelope Road will not be located on the berm and will be planted at commercial operation in order to allow sufficient time to complete the improvements to Antelope Road following completion of the major plant construction activities. Based on this plan, years to screening for the west end of the cooling tower and recycled water tank are estimated at approximately 3.5 years, substantially less than Staff's suggested 5 years. The desired screening of the HRSG will be achieved in approximately 7.2 years. The sight line for the HRSG from KOP 1 incorporates the berm and planting at mobilization. The east end of the cooling tower will achieve the recommended screening height in an estimated 5.8 years. The Type A and Type B screening trees along the south edge of the project site will be planted at commercial operation and no berm is contemplated for this area. This provides essential access to the site during construction, with the top of the cooling tower fan deck still screened from this KOP in less than 6 years.

KOP 2

The most visible project structures from KOP 2 are also the cooling tower, HRSG, and recycled water tank. As Figure 2 shows, all of the sight lines from this KOP include the berm and area of the landscape plan where the Type A screening trees will be planted at mobilization. With the exception of the HRSG, the calculations in Table 1 indicate that all of the larger project structures will be screened to the desired heights in less than 4 years. The analysis predicts that the HRSG will be screened to the top of the operating deck in slightly more than 7 years. In addition to fast-growing trees and starting with 24-inch box trees, this sight line includes the additional, feasible on-site mitigation to achieve screening as quickly as possible including the 6-foot berm and planting the Type A trees at mobilization.

KOP 4

The most visible project structure from this view is the HRSG. Trees planted on the northern boundary of the IEEC site are estimated to screen this view in approximately 5.3 years (see Table 1). To decrease the time to screening, the northern boundary of the site will also be planted at mobilization as noted in Figure 2. As shown in Figure 2, there is an existing landscape berm that runs along the west, north, and east sides of the asphalt plant located immediately north of the IEEC site. In addition to the trees planted on the IEEC site, the Applicant discussed augmenting this existing landscaping with the owners of the asphalt plant in an effort to further improve the screening of the IEEC from KOP 4. They expressed their willingness to allow the

Applicant to augment their landscaping through improvements to the irrigation system and supplemental plantings of trees to fill in some of the gaps in the existing screening. Mr. Davidson reviewed the existing landscaping at the asphalt plant during his site visit and concurred that this was feasible. Because details of augmenting the landscaping at the asphalt plant are not finalized at this time, the benefit of these improvements have not been included in this analysis, thus, the 5.3 years achieved by fast growing trees on the IEEC site represents a worst-case assessment. Also, street-tree planting along Highway 74 provides opportunity for additional screening.

KOP 5

This is the view from the local commercial development including Mott's Farmers market. The larger project features from this KOP include the switchyard, HRSG, and combustion turbines. For on-site planting, the years to screening range from 6 to 7.5 years.

However, one of the suggestions discussed in the PSA workshop was to consider planting along Highway 74 to increase screening from the viewpoint much more quickly. Mr. Davidson recommended a large shrub screen on the south side of Highway 74 (see Figure 2). He also confirmed that planting could take place in the existing Highway 74 right-of-way. The Applicant is working to confirm Mr. Davidson's opinion that planting could take place in the existing Highway 74 right-of-way. Large shrubs are proposed because a tree planting would interfere with the overhead power lines above and because of the close proximity of the landscaping to the viewer, screening at the lower heights is more critical than fast vertical growth. His recommendation was a native shrub, *Heteromeles arbutifolia* or Toyon (shown as Type F in Table 2). Native planting is consistent with our discussion in the biology part of the PSA workshop pertaining to the landscaping for the gas compressor station. The plan described above includes planting these shrubs in the area shown on Figure 2. In this case, all of the larger project features would achieve the desired level of screening in 3 years or less. The Applicant is currently meeting with the Riverside County EDA and will work with them to incorporate this planting as part of the Applicant's mitigation in their future plans.

Lastly, for both KOPs 4 and 5, the Riverside County EDA is currently planning a beautification project along the north side of Highway 74. It is in the early planning stage, and Mr. Davidson advised that the work would consist primarily of a landscape program where street trees would be planted on 50-foot centers, on the north side of Highway 74 (see Figure 2 for location). Although street trees would not actually screen the lower IEEC structures at this distance, they would provide screening of the higher structures (HRSGs and stacks). In addition, they would improve the overall aesthetics of the IEEC from KOPs 4 and 5. The Applicant will continue to monitor this project as it develops and provide Staff with more specific input as it becomes available. For the purpose of this report, quantitative data is not yet available.

CONCLUSIONS

- The Applicant has been able to effectively implement the feasible alternatives suggested by Staff in the PSA workshop to greatly reduce the time to achieve screening of the IEEC structures.

- Table 2, Screening Calculations, describes the years to screen each of the larger project structures from each KOP. In accordance with the landscape plan as proposed, all of the larger structures are screened in less than 8 years after commercial operation, and the majority screened less than 6 years. Furthermore, this analysis is based on the quantitative data available at present. Improvements to the existing landscape berm at the asphalt plant and planting in the southern right-of-way of Highway 74 have the potential to greatly reduce the time to screen the larger project features from KOPs 4 and 5, respectively.
- Future actions include working the Riverside County EDA to develop a MOU regarding planting the large shrubs on the south side of Highway 74 and monitoring the current EDA beautification project for opportunities to adjust or augment the current project to provide additional screening of the IEEC project.

APPENDIX A

Species Photographs



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Grevillea robusta

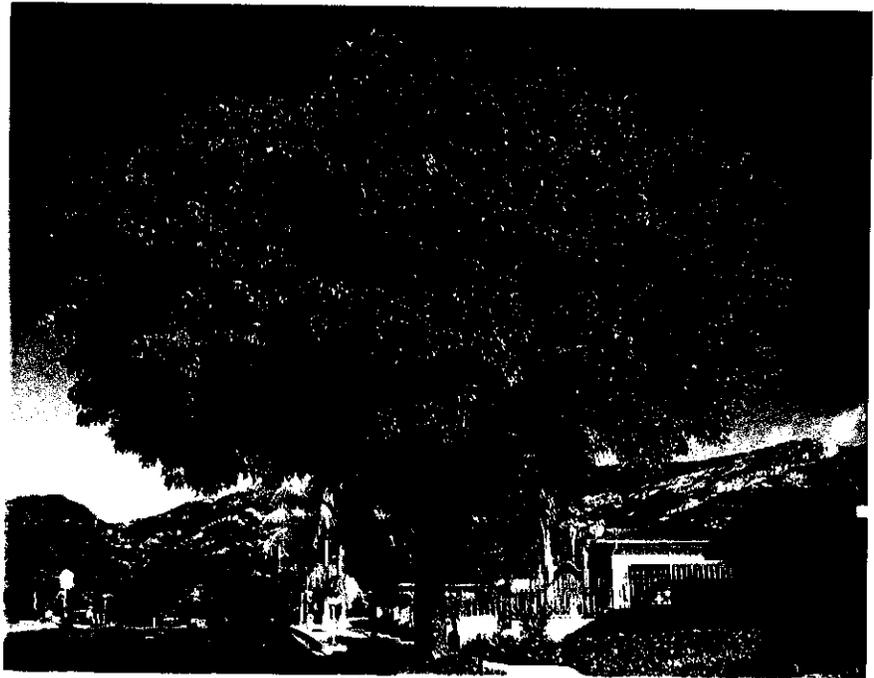


©2002 Horticipia, Inc.
Grevillea robusta

Figure A-1
Type A - *Grevillea robusta* (Silk Oak)



©2002 Horticipia, Inc.
Fraxinus uhdei



©2002 Horticipia, Inc.
Fraxinus uhdei

Figure A-2
Type B - *Fraxinus uhdei* (Shamel Ash, Evergreen Ash, Mexican Ash)



©2002 Hortycopia, Inc.
Robinia x ambigua 'Idahoensis'



©2002 Hortycopia, Inc.
Robinia x ambigua 'Idahoensis'

Figure A-3
Type C - *Robinia x ambigua* 'Idahoensis' (Idaho Locust)



©2002 Horticoopia, Inc.
Pinus brutia ssp. eldarica

Figure A-4
Type D - *Pinus eldarica* (Mondel Pine)



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Lagerstroemia indica



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Lagerstroemia indica



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Lagerstroemia indica



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Lagerstroemia indica

Figure A-5
Type E - *Lagerstroemia indica* (Crape Myrtle)



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Heteromeles arbutifolia



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Heteromeles arbutifolia



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Heteromeles arbutifolia

Figure A-6
Type F - *Heteromeles arbutifolia* (Toyon, Christmas Berry, California Holly)

APPENDIX B

Landscape Berm Schematic

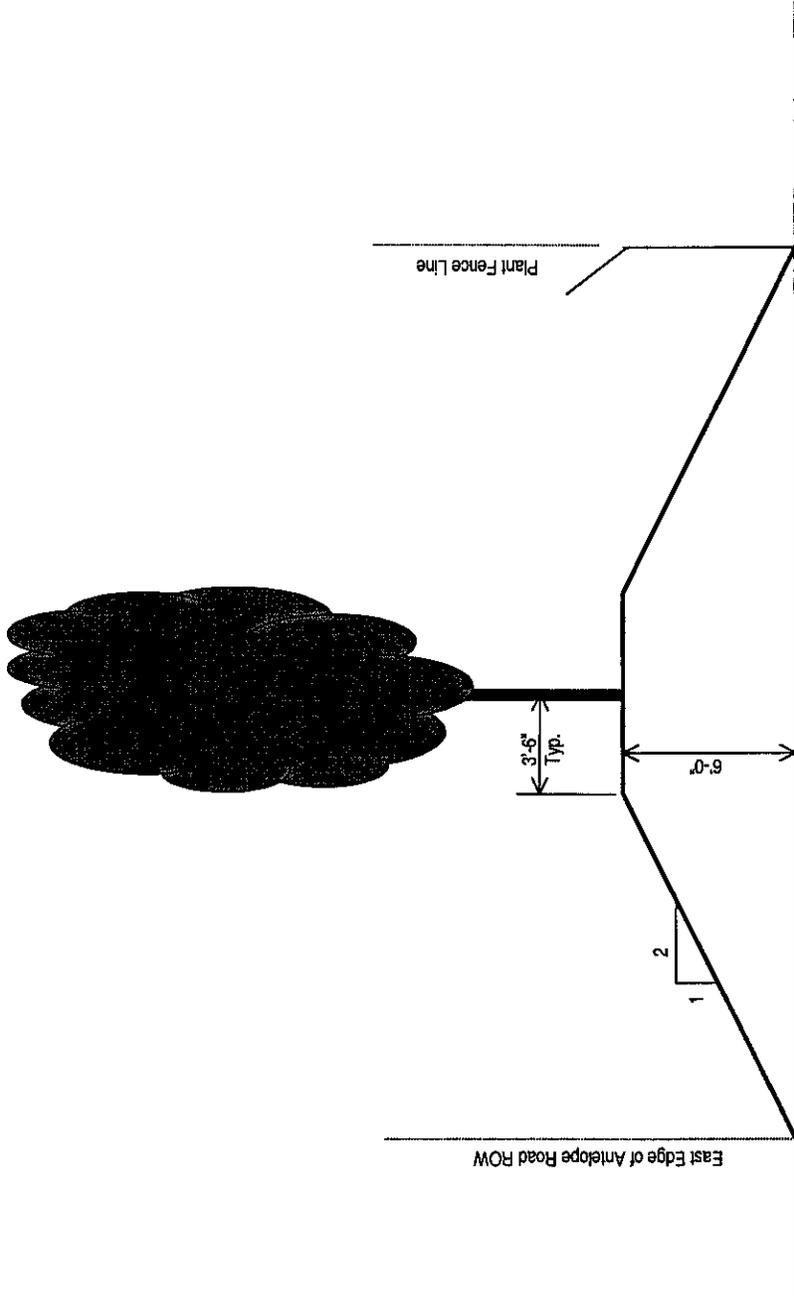


Figure B-1
Landscape Berm Schematic